

REMARKS

Claim Rejections - 35 USC § 103

Claims 1, 4-13, 22 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al. (U.S. Patent No. 5,501,986 A) ("Ward") in view of Oyama et al. (U.S. Patent No. 5,552,274) ("Oyama") and Yamada et al. (U.S. Patent No. 6,842,088 B2) ("Yamada"). Claims 14-21 and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over the aforementioned cited prior art further in view of Blackburn et al. (U.S. Patent No. 6,846,654 B1) ("Blackburn"). Claim 31 was rejected under 35 U.S.C. 103(a) as being unpatentable over the aforementioned cited prior art further in view of Gao et al. (U.S. Patent No. 6,218,507 B1) ("Gao"). Applicants respectfully traverse these rejections.

Independent claim 1 is not obvious over the combination of Ward, Oyama and Yamada because the rationale for the combination of Yamada with Ward and Oyama supplied by the examiner is merely conclusory. "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness". *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350, slip op. at 11 (U.S. April 30, 2007)(citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Further, the combination of elements from nonanalogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. *In re Oeticker*, 977 F.2d 1443 (Fed. Cir. 1992). Claim 1 recites, *inter alia*, a device comprising "a film bulk acoustic piezoelectric resonator (FBAR)." As discussed in the last response, "a FBAR device is totally different from a SAW device as the acoustic wave in FBAR travels in the thickness direction through the bulk of the piezoelectric material while the acoustic wave in SAW travels along the surface of a material" (p.10, l.12-4). That is, the principal of operation of the two devices is completely different.

In the office action, however, the examiner states "Yamada does teach film bulk acoustic piezoelectric resonator (FBAR) devices that are suitable for use in various kinds of sensors (see, e.g., col. 1, lines 10 - 22)." (Office action, p.4, l.17-18). "Consequently, as shown by Yamada, the use of a film bulk acoustic piezoelectric resonators with a sensor would have been predictable to a

person of ordinary skill in the art.” (Office action, p.4, 1.22 - p.5, 1.2). However, the portion cited by the Examiner actually states:

The present invention relates to a thin film bulk acoustic resonator using an electroacoustic effect of a piezoelectric thin film, and more particularly to a thin film bulk acoustic resonator usable as a constituent element of a filter for electronic circuits of communication equipment and a method of producing the same.

Further, the present invention relates to a device using a piezoelectric thin film used in a broad field such as a thin film oscillator, a thin film VCO (Voltage Control Oscillator), a thin film filter, a duplexer, various kinds of sensors, etc. **used in mobile communication equipment or the like.** (Col.1, 1.10-22)(emphasis added)

That is, Yamada explicitly teaches that his thin film bulk acoustic device is suitable for use in **mobile communications**. Indeed, in the very next paragraph, Yamada emphasizes that his thin film bulk acoustic device is intended for electronics applications.

In order to meet the need of reducing the cost and size of electronic equipment, an effort of reducing the size of a filter as a circuit constituent element is being made continuously without changing its way. Strict requirements on both of the size and cost of constituent parts are imposed on consumer electronic equipment such as a **cellular phone, miniature radio**, etc. A circuit contained in such **electronic equipment** uses filters which must be tuned precisely to predetermined frequencies. Accordingly, an effort of supplying inexpensive and **compact filters** is being continuously made at every moment. (Col.1, 1.24-35)(emphasis added)

One of ordinary skill in the art would not look to replace the SAW DNA sensors of Ward or Oyama with the FBAR device of Yamada because Ward/Oyama and Yamada are in completely different fields and there no evidence that the substitution of the SAW DNA sensors of Ward or Oyama into Yamada's FBAR device designed for mobile communications would still allow the SAW DNA sensors of Ward and Oyama to work for the intended purpose of nucleic probe assays (Ward) or detecting target DNA in a sample (Oyama). As explained in the previous response, “[t]he present inventors were the first to recognize that FBAR devices could be useful as biosensors and avoid the problems with convention biosensors such as those of Ward” (p.11, 1.31-33). Simply, Ward/Oyama and Yamada are from non-analogous fields and there is no teaching, suggestions, or rational reason one of ordinary skill in the art would replace the SAW sensor of Ward with the

FBAR mobile communications device of Yamada absent the use of hindsight from Applicant's own disclosure. Applicants respectfully request withdrawal of the rejections.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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